This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A method of transmitting information between a first computer and a second computer over a network, comprising the steps of:

(1) embedding in a header of each of a plurality of data packets a network address that periodically changes between successive data packets, wherein each network address is used to route packets over the network;

(2) transmitting the plurality of data packets between the first computer and the second computer;

(3) receiving the transmitted data packets at the second computer; and

(4) for each received data packet, comparing the network address to a moving window of valid network addresses and, in response to detecting a match within the moving window, accepting the received data packet for further processing, and otherwise rejecting the received data packet.

Claim 2 (previously presented): The method of claim 1, wherein step (1) comprises the step of using an Internet Protocol address in an Internet Protocol header as the network address, wherein the Internet Protocol address is used to route the data packets over the Internet.

Claim 3 (canceled)

Claim 4 (previously presented): The method of claim 1, further comprising the step of embedding an additional quasi-random value in a data field external to an Internet Protocol header of each data packet.

Claim 5 (original): The method of claim 1, wherein steps (1) and (4) are performed in a data link layer of an ISO standard communication protocol.

Claim 6 (previously presented): The method of claim 1, wherein step (1) comprises the step of using a Media Access Control (MAC) hardware address as the network address, wherein the MAC hardware address is used to route the data packets on a local area network.

Claim 7 (currently amended): The method of claim 1, wherein step (1) comprises the step of using a different network address for each successive data packet.

Claim 8 (previously presented): The method of claim 1, further comprising the step of moving the window as each successive data packet is received.

Claim 9 (currently amended): The method of claim 1, further comprising the step of sharing between the first computer and the second computer information sufficient to generate the ~~set~~ moving window of valid network addresses.

Claim 10 (previously presented): The method of claim 1, further comprising the step of transmitting from the first computer to the second computer an algorithm for selecting successively valid network addresses.

Claim 11 (original): The method of claim 1, wherein step (4) comprises the step of using a presence vector to determine whether to accept each data packet.

Claim 12 (previously presented): The method of claim 1, wherein step (4) comprises the step of using a hashing function to determine whether the network address is valid.

Claim 13 (previously presented): The method of claim 1, further comprising the step of transmitting a synchronization request between the first computer and the second computer, wherein the second computer uses the synchronization request to maintain synchronization of valid network addresses.

Claim 14 (original): The method of claim 13, further comprising the step of, in response to failure to receive a synchronization acknowledgement from the second computer, shutting off transmission of data packets to the second computer.

Claim 15 (previously presented): The method of claim 13, further comprising the step of embedding a synchronization value in each data packet that permits the second computer to re-establish synchronization in a set of potentially valid network addresses.

Claim 16 (previously presented): The method of claim 13, further comprising the step of moving the window of valid network addresses in the second computer in response to receiving the synchronization request from the first computer.

Claim 17 (previously presented): The method of claim 1, wherein step (1) comprises the steps of embedding a periodically-changing Internet Protocol source address in an Internet Protocol header and embedding a periodically-changing Internet Protocol destination address in the Internet Protocol header, wherein the source and destination addresses are used to route each data packet over the Internet.

Claim 18 (currently amended): The method of claim 17, further comprising the steps of:

embedding a plurality of the data packets into a frame; and

embedding a source and destination hardware address in the frame, wherein the source and destination hardware address are quasi-randomly generated and used to route the frame on ~~a~~ the network.

Claim 19 (previously presented): The method of claim 1, further comprising the step of maintaining in the first computer a first transmit table and a first receive table, and maintaining in the second computer a second transmit table and a second receive table,

wherein each transmit table comprises a list of valid network addresses that are to be inserted into outgoing data packets;

wherein each receive table comprises a list of valid network addresses that are to be compared against incoming data packets; and

wherein the first transmit table in the first computer matches the second receive table in the second computer; and wherein the first receive table in the first computer matches the second transmit table in the second computer.

Claim 20 (previously presented): A method of transmitting data packets over a network comprising a plurality of computers connected to each other through a plurality of physical transmission paths, the method comprising the steps of:

(1) for each of a plurality of data packets, randomly selecting one of the plurality of physical transmissions paths through the plurality of computers;

(2) selecting a next pair of source and destination network addresses generated from an algorithm that generates a plurality of pairs of source and destination network addresses each associated with the one randomly selected physical transmission path; and

(3) transmitting each data packet over the randomly selected physical transmission path using the selected next pair of source and destination network addresses.

Claim 21 (canceled)

Claim 22 (original): The method of claim 20 wherein step (1) comprises the step of avoiding selection of a path that is not operational.

Claim 23 (previously presented): A system comprising:

a first computer that embeds into each of a plurality of data packets a network address that periodically changes between successive data packets, wherein each network address is used to route packets over a network; and

a second computer coupled to the first computer through the network,

wherein the first computer transmits the plurality of data packets to the second computer, and

wherein the second computer receives the transmitted data packets, compares the network address in each received data packet to a moving window of valid network addresses and, in response to detecting a match, accepts the received data packet for further processing, and otherwise rejects the received data packet.

Claim 24 (previously presented): The system of claim 23, wherein the first computer embeds into each of the plurality of data packets an Internet Protocol address in an Internet Protocol header as the network address, wherein the Internet Protocol address is used to route the data packets over the Internet.

Claim 25 (canceled)

Claim 26 (previously presented): The system of claim 23, wherein the first computer embeds an additional quasi-random value in a data field external to an Internet Protocol header of each data packet.

Claim 27 (previously presented): The system of claim 23, wherein the first computer embeds each network address in a first data link layer of an ISO standard communication protocol, and wherein the second computer compares each network address in a second data link layer of the ISO standard communications protocol.

Claim 28 (previously presented): The system of claim 23, wherein the first computer embeds a Media Access Control (MAC) hardware address as the network address, wherein the MAC hardware address is used to route the data packets on a local area network.

Claim 29 (currently amended): The system of claim 23, wherein the first computer embeds a different network address for each successive data packet.

Claim 30 (previously presented): The system of claim 23, wherein the second computer moves the window as each successive data packet is received.

Claim 31 (currently amended): The system of claim 23, wherein the first and second computers share common information sufficient to generate the ~~set~~ moving window of valid network addresses.

Claim 32 (previously presented): The system of claim 23, wherein the first computer transmits to the second computer an algorithm for selecting successively valid network addresses.

Claim 33 (original): The system of claim 23, wherein the second computer uses a presence vector to determine whether to accept each data packet.

Claim 34 (previously presented): The system of claim 23, wherein the second computer uses a hashing function to determine whether the network address is valid.

Claim 35 (previously presented): The system of claim 23, wherein the first computer transmits to the second computer a synchronization request, wherein the second computer uses the synchronization request to maintain synchronization of valid network addresses.

Claim 36 (original): The system of claim 35, wherein the first computer, in response to failure to receive a synchronization acknowledgement from the second computer, shuts off transmission of data packets to the second computer.

Claim 37 (previously presented): The system of claim 35, wherein the first computer embeds a synchronization value in each data packet that permits the second computer to re-establish synchronization in a set of potentially valid network addresses.

Claim 38 (previously presented): The system of claim 35, wherein the second computer moves a window of valid network addresses in response to receiving the synchronization request from the first computer.

Claim 39 (previously presented): The system of claim 23, wherein the first computer embeds a periodically-changing Internet Protocol source address in an Internet Protocol header and embeds a periodically-changing Internet Protocol destination address in the Internet Protocol header, wherein the source and destination addresses are used to route each data packet over the Internet.

Claim 40 (currently amended): The system of claim 39, wherein the first computer embeds a plurality of the data packets into a frame and embeds a source and destination hardware address in the frame, wherein the source and destination hardware address are quasi-randomly generated and used to route the frame on ~~a~~ the network.

Claim 41 (previously presented): The system of claim 23,

wherein the first computer comprises a first transmit table and a first receive table,

wherein the second computer comprises a second transmit table and a second receive table,

wherein each transmit table comprises a list of valid network addresses that are to be inserted into outgoing data packets,

wherein each receive table comprises a list of valid network addresses that are to be compared against incoming data packets,

wherein the first transmit table in the first computer matches the second receive table in the second computer, and

wherein the first receive table in the first computer matches the second transmit table in the second computer.

Claim 42 (previously presented): A router coupled to a network comprising a plurality of computers connected to each other through a plurality of physical transmission paths,

wherein the router receives a plurality of data packets for transmission across the network; and

wherein the router, for each data packet, randomly selects one of the plurality of physical transmission paths through the plurality of computers and transmits each data packet over the randomly selected physical transmission path using a pair of source and destination network addresses generated from an algorithm that generates a plurality of pairs of source and destination addresses each associated with the one randomly selected physical transmission path.

Claim 43 (canceled)

Claim 44 (previously presented): The router of claim 42, wherein the router avoids selection of a non-operational path.

Claim 45 (previously presented): A system comprising in combination:

a transmitting node that generates pseudo-random network addresses and embeds the pseudo-random network addresses into headers of data packets for transmission; and

a receiving node that receives data packets transmitted by the transmitting node, wherein the receiving node, for each received packet, extracts each pseudo-randomly generated network address, compares it to a moving window of potentially valid network addresses shared between the transmitting node and the receiving node and, in response to detecting a match, accepts the data packet, and otherwise discards the packet.

Claim 46 (previously presented): The system of claim 45, wherein the receiving node maintains a window of valid network addresses, wherein the window is moved in response to detecting a match.

Claim 47 (previously presented): The system of claim 45, wherein each pseudo-randomly generated network address comprises a valid Internet Protocol address that is assigned to the receiving node.

Claim 48 (previously presented): The system of claim 45, wherein each pseudo-randomly generated network address comprises a valid Media Access Control (MAC) hardware address that is assigned to the receiving node.

Claim 49 (previously presented): The system of claim 45, wherein the transmitting node generates a different pseudo-randomly generated network address for each successive data packet.

Claim 50 (previously presented): A receiving computer that receives data packets from a transmitting computer, wherein the receiving computer comprises computer instructions that execute the steps of:

(1) for each received data packet, extracting a discriminator value inserted by the transmitting computer;

(2) comparing the extracted discriminator value to a set of valid discriminator values on the basis of information previously shared with the transmitting computer; and

(3) in response to detecting a match in step (2), accepting the received data packet for further processing and otherwise rejecting the data packet, wherein the receiving computer maintains a sliding window of valid discriminator values, wherein the window slides to encompass a next range of valid discriminator values in response to detecting matches.

Claim 51 (original): The receiving computer of claim 50, wherein the receiving computer further comprises computer instructions that extract as the discriminator value an Internet Protocol address from a header portion of each data packet.

Claim 52 (canceled)

Claim 53 (original): The receiving computer of claim 50, wherein the receiving computer receives information from the transmitting computer sufficient to establish the set of valid discriminator values.

Claims 54-67 (canceled)

Claim 68 (previously presented): A transmitting computer that transmits data packets to a receiving computer over a network, wherein the transmitting computer comprises computer instructions that execute the step of, for each transmitted data packet, inserting into a header of the data packet a network address for extraction by the receiving computer, wherein the network address is used to route data packets over the network and is generated using an algorithm that selects the network address quasi-randomly from a plurality of network addresses that are each mapped to the receiving computer.

Claim 69 (previously presented): The transmitting computer of claim 68, wherein the transmitting computer further comprises computer instructions that insert as the network address an Internet Protocol address into the header portion of each data packet.

Claim 70 (previously presented): The transmitting computer of claim 68, wherein the transmitting computer transmits information to the receiving computer sufficient to establish a set of valid network addresses.

Claims 71-97 (canceled)

Claim 98 (new): The method of claim 1, wherein steps (1) and (4) are performed in a data link layer of a standard communication protocol.

Claim 99 (new): The method of claim 1, wherein step (1) comprises the step of using a hardware address as the network address, wherein the hardware address is used to route the data packets on a local area network.

Claim 100 (new): The system of claim 23, wherein the first computer embeds each network address in a first data link layer of a standard communication protocol, and wherein the second computer compares each network address in a second data link layer of the standard communications protocol.

Claim 101 (new): The system of claim 23, wherein the first computer embeds a hardware address as the network address, wherein the hardware address is used to route the data packets on a local area network.

Claim 102 (new): The system of claim 45, wherein each pseudo-randomly generated network address comprises a valid hardware address that is assigned to the receiving node.